

ABSTRACT OF THE DISCLOSURE

5 The present invention relates to an optical communication system having a flat gain spectrum and an excellent pumping efficiency in a signal wavelength band, and comprising a structure which is realizable/operable at a low cost. This optical communication system comprises an optical transmission line including a plurality of Raman amplification optical fibers, and pumping light suppliers for supplying pumping light to the Raman amplification optical fibers. In particular, two Raman amplification optical fibers selected from the plurality of Raman amplification optical fibers included in the optical transmission line differ from each other in at least one of the wavelength at which the gain of Raman amplification becomes the highest, and the number of channels at which the gain of Raman amplification is maximum. Such a structure flattens the gain of Raman amplification viewed from the whole optical transmission line from a transmitter to a receiver within the signal wavelength band even when the gain spectrum of Raman amplification in each of the Raman amplification optical fibers included in the optical transmission line is not flat within the signal wavelength band.